



Over the Editor's Desk

his is the second installment of an article describing the work of Joseph Martz, an inventor who came to America as a young man from an industrial area of Poland, and settled in the Chicago community. In Chicago, he was not a university chemist, an industrial chemist of the European tradition, a proponent of the tradition of thoroughness and patience which produced the dye and chemical industries of Germany, and the long, ominous industrial valleys of Europe in an age of war. He was a good draftsman, too, and worked as a commercial artist. For a time in Chicago he had his living making drawings

for the catalogues of mail-order houses.

He has worked all of his life—without benefit of well-equipped laboratories and machine shops—on inventive ideas of complex industrial nature. One of his early inventions was a chemical process for hardening wood. I have seen samples of that wood, with the original grain and coloring only slightly darkened, but turned as hard almost as marble. He intended the process to be used primarily in the printing industry. He told how one of his partners attempted to steal the invention. The man failed, but the process has never been commercialized. There may be sound technical or financial reasons for

it. But to the layman, handling a piece of this beautifully finished wood, and knowing the wide uses to which plastics have been put, it seems like another fine industrial process lost to the world by the difficulties of financing production.

About thirty years ago Martz's health failed him, and it was necessary to move to a warmer climate. For some reason he picked Pascagoula, then a little lumber and fishing town. He opened a little grocery store in the town, operated it for a few years, and then moved back into the farming area around Hurley, twenty miles back in the cut-over pinelands. Martz had a little money, and bought small, poor property, and he has lived there since, selling a few eggs and pecans and raising much of his food.

To look at him, with his great weight, his round, impassive face, it would be hard to guess the prolific inventive activities of his mind. In the 1920's he read something of the legendary history of the ramie fiber, which for thousands of years, since the days of the Egyptians and even long before them, has been

THE MOSS POINT ADVENTURE

known as the "hemp" spreaded textile fiber on earth, and which for thousands of years has baffled man's effort to find a practical way of separating it from the stalk. Martz determined to find a way to produce ramie fiber in quantities sufficient for the modern textile industry.

The ramie plant looks a great deal like the common bloodweed of the south, which grows in damp places and is a familiar sight even in cities where it overgrows vacant lots in jungle-like thickets. Probably it stems of the same botanical genus. It grows in most of the warm countries of the world.

The dead pharaohs of Egypt were found in ramie bindings when they were sealed in the pyramids. Archaeologists have found mummy wrappings in fair condition after three thousand years. The cloth has been produced in China for thousands of years. Chinese coolies scraped the fiber under water to separate it from its gummy casing, and even in modern times ramie cloth in small commercial quantities has been produced in the Orient and East Indies. But so tedious was the process that only coolie labor made its production possible, or slave labor in the days of Egypt.

Unlike cotton, the ramie fiber grows in the stalk of the plant itself rather than in bolls on branches convenient for pick-

ing in the pine and showed him a personal letter from the inventor to himself. Martz's manner was that of some master craftsman of the Italian Renaissance, a Cellini, a Leonardo, discussing with weary patience the work of an enthusiastic journeyman. "No machine exists or can exist which can remove ramie fiber in usable condition by pressure. The fiber is crushed and fragmented by any pressure great enough to squeeze out the gum. The gum is extremely adhesive. That is the problem. Otherwise your shirt right now would be ramie, not cotton."

Martz saw in the beginning that the mechanical separation of the fiber would be the last phase of an interlocking series of problems. The first problem was to develop a ramie strain that was better suited to the climate and soil of the United States, which would produce a seed of better germination qualities than those of the imported plants.

By a series of cross-breeding and selection of stock, Martz eventually produced a cultivated ramie strain which excelled the import in every characteristic. I saw a letter written by a former chief of the department of plant experimentation in the U. S. Department of Agriculture which acknowledged that the Martz strain was unquestionably superior. It is the strain now used in the great majority of

plant itself rather than in bolls on branches convenient for picking. The outer surface of the bark is scaly and woody; beneath this is the cambium layer of growth cells, the inner green layer of all plants which is the thin sheath of creative life lying beneath the dead bark and the dead wood or bith centers of trees and plants. The ramie fibers are long, fine, hollow fibers running the length of the plant and imbedded in the gummy cambium layer of living cells. To separate them from the gum is the baffling technical problem.

Ramie has been getting an increasing amount of publicity in recent years particularly in the South, where it can grow prolifically. The general newspaper reader by now familiar with many of its virtues has heard, for instance, that it is twice as strong as silk, that it does not mould or mildew, that it is stronger wet than dry, that for beauty, finish, wearing qualities it is not approached by cotton, silk or artificial textiles. But the layman who gets a chance to examine the raw fiber itself is amazed at what he finds.

Mrs. Martz went out to the fifth row plot where they keep their special strains of ramie growing, and brought in a young tender looking green plant. Their contemporary crop was immature. With a kitchen knife she scraped off some of the bark caught up a few strands of the inner layer under the knife point and peeled them out of the stalk. They were a foot or two in length. They looked like any ordinary peeling from a green fibrous weed.

I wrapped them around my fingers and started to pull. She cried out suddenly to stop me. "You will cut your finger to the bone if you do that," she said. She told me this had happened to another visitor. Testing the fibers gently, I could see them bite into my fingers without any sign of breaking. The strand I had was the thickness of Number Eight cotton thread. But it would stand enough pressure to cut literally to the bone before it would snap.

"There have been many chemical processes developed," Martz said, speaking in his slow, intent fashion, "to dissolve and remove the gum from the ramie fiber. It is not difficult to do so with chemical solutions. But the chemical method is useless. It ruins the fiber itself. Unlike cotton and silk, and other fibers, the ramie fiber is hollow. The little tubes fill up with the chemical solution, and when dried the chemicals return to their crystalline state. No matter how much it is soaked or washed

used in the great majority of commercial efforts and experiments in the United States.

Then began many years of persistent and high-grade "tinkering" with machines and methods to solve the problem of decortication. Martz has developed his process little by little, covering it at regular intervals with new patent. He now holds three patents, and he is in need of funds at present to go to Washington to get his fourth.

The process he now uses pulls the stalk of the ramie plant through a metal cylinder. A number of these are arranged in a row to handle many stalks at a time. A series of knives in the cylinders neatly strip off the outer covering of the plant, including the ramie fiber, and eject the naked stalk. The stalk has a high cellulose content and is well suited to use as raw material in plastic manufacturing and other industries needing cellulose.

Martz will describe the process from this point forward in only general terms for security reasons. His method blows the fibers apart with pure air, after a certain heat and water treatment. It is not a steam explosion method. Steam ruins the fibers as completely as do chemicals. Martz has one of two candidates in the county, one of them a Pascagoula merchant who stems from the Finnish farming community near Hurley. This man is a person noted for character and common-sense. He told me that in his work with Martz, the old inventor has shown him enough of the process to con-

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vince him beyond any doubt that it is simple, efficient, and practical. If the machine could only be financed in terms suitable to Martz, he says, he believes it could work major changes in the agricultural and industrial background of the Southern States. Having met with many types in newspaper work, and with many ideas, we think the machine may well constitute a successful method for decortivating ramie fiber.

Apparently other people have thought so to, others with money to invest. One investor working with Martz had a field of many acres planted in ramie, probably the largest stand in the country. The field was near the inventor's house. One day Martz saw the man supervising the plowing under of the entire stand. Amazed, he asked the man why in the world he was doing this. The man answered, Martz said, "not to worry too much about it, he was being well paid to do it." Martz believes firmly that the man accepted

out his poor house are the parts of his machine; stored in his mind is the final secret. He is growing old. He is willing to go to his grave with the secret rather than have it taken from him by what he considers covinence.

It may be, of course, that the fabulous fiber of the ramie plant can never be commercially separated. It may be that Martz' method in the long run would be found like all the others to be just one more hopeful failure. The writer of this column, who as a journalist has looked without enthusiasm on many fake inventors and fake inventions, is inclined to think that Martz has actually developed a process that will work. He has the mark of the expert, of the master craftsman.

Perhaps, then, the stout old man sitting on the steps of a poor farm house on a Mississippi backroad, that the traveler in the big automobile would likely think some simple rustic has the formula for an industry that could revitalize the South's cotton economy, and the answer to a textile riddle as old as the Sphinx of Egypt.

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"From my first study of the plant, I saw that the only separation or decortication process which could possibly work with the ramie fiber was a mechanical one. Water and heat to a certain amount could be used, but excessive heat also made the fiber useless. Knowing I had to work within these limitations, I set out to find the process."

He reached in a pile of papers and got out newspaper photographs and stories describing various processes for which the inventors, and often enough the newspaper, claimed complete success.

"None of these things can possibly work," he said. He showed me one photograph of a machine which had gotten wide publicity, which showed the inventor standing alongside it holding up a mass of crushed ramie stalks. The photographer said the machine decorticated ramie in the field.

"It does not," Mr. Martz said. "It cannot be done." He then

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All that Martz has now is a small plot to keep the cultivated ramie strain alive.

Another man, a wealthy retired Northerner who was living in the South, became enthusiastic about the process, and worked with Martz for a time. On his death, he left \$100,000 in his will. Martz said for the development of the ramie process. Martz says the failure of the will to state specifically which ramie process the deceased intended presented a loophole to his heirs, who succeeded in breaking the will.

That's how the matter stands today. Martz desires to go to Washington to take out a patent on the latest development of the process, which he says marks the close of the experimental period. He has no more money. He needs a backer who will work with him on his own terms. Scattered through

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